IN THE CLAIMS

1. (Currently Amended) A method of forming media strands comprising:

compounding a greater portion by weight of a water-soluble polymer with a lesser portion by weight of a selected cross-linking chemical agent with remainder by weight being water to form a combined compound capable of preventing the water-soluble polymer from dissolving in water including an ambient humid environment;

electrospinning said compound from at least one capillary tube, wherein each of said at least one capillary tubes at least ~~one~~ two sharp ~~tip~~ tips ~~source having~~ and has a diameter in the approximate range of 0.1mm to 3mm, wherein said electrospinning is conducted at a pre-selected high voltage to emit nanofibers of sufficient strength and flexibility to permit media shaping; and,

collecting said nanofibers on a selected substrate.

2. (Previously Presented) The method of forming media strands of Claim 1, wherein said water-soluble polymer comprises approximately 3% to 50% of said combined compound and said selected cross-linking chemical agent comprises a dialdehyde in a range of approximately 0.1% to 20% of the total compound with the balance by weight being water.

3. (Previously Presented) The method of forming media strands of Claim 1, wherein said water-soluble polymer comprises approximately 3% to 50% of said combined compound, said selected cross-linking chemical agent comprises approximately 0.1% to 20% of said compound, and said compounding has the additional step of adding an acid, the balance by weight of said compound being water.

4. (Original) The method of forming media strands of Claim 1, wherein said compound is in liquid form.

5. (Original) The method of forming media strands of Claim 2, wherein said compound liquid is cross-linked in acidic condition.

6. (Original) The method of forming media strands of Claim l, wherein said cross-linking chemical agent is Glyoxal ($C_2H_2O_2$).

8. (Original) The method of forming media strands of Claim 1, wherein said cross-linking chemical agent is Glutaraldehyde ($C_5H_8O_2$).

9. (Original) The method of forming media strands of Claim 1, wherein said cross-linking chemical agent is Maleic acid ($C_4H_4O_4$).

10. (Original) The method of forming media strands of Claim 1, wherein said cross-linking chemical agent is Borax ($B_4Na_2O_7$).

11. (Original) The method of forming media strands of Claim 1, wherein said water-soluble polymer is polyvinyl alcohol.

12. (Original) The method of forming media strands of Claim 1, wherein said cross-linking agent forms three dimensional submicroscopic structural molecules.

13. (Previously Presented) The method of forming media strands of Claim 1, wherein said electrospinning high voltage is in the approximate range of 3 to 100 kilovolts.

14. (Previously Presented) The method of forming media strands of Claim 13, wherein said electrospinning high voltage advantageously is approximately 15kV.

15. (Previously Presented) The method of forming media strands of Claim 1, wherein said electrospinning includes passing said combined compound from a storage zone to a pumping zone; pumping said material through an electrically insulated zone to a high voltage capillary feeding zone to emit media strands within selected fiber emission rate ranges; and, passing said emitted fibers to a substrate in a collecting zone.

16. (Currently Amended) The method of forming media strands of Claim 15, wherein said emitted media strands are nanofibers being emitted at an emission rate from each of said at least one capillary tubes in the approximate range of 0.008 to 20 cubic centimeters per minute.

17. (Previously Presented) The method of forming media strands of Claim 16, wherein said emitted media strands are nanofibers being emitted at an emission rate of about 0.6 cubic centimeters per minute.

18. (Previously Presented) The method of forming media strands of Claim 15, wherein said electrically insulated zone includes porous insulating material of polytetrafluroethylene.

19. (Original) The method of forming media strands of Claim 15, wherein said substrate is movably mounted on a grounded collector.

20. (Cancel)

21. (Previously Presented) The method of forming media strands of Claim 1, wherein said strands are warmed by a heating source at approximately 60°C to reduce surface tension.

22. (Currently Amended) A method of forming nano fiber filter media comprising:

combining approximately 3% to 50% of a polymer having polyvinyl alcohol with a cross-linking chemical agent in a range of approximately 0.1% to 20% of the total compound with the balance by weight being water forming a three dimensional submicroscopic structural molecules preventing said polymer from dissolving in water including partial dissolution in an ambient humid environment;

storing selected quantities of said combined compound in a storage zone;

passing said selected quantities of said combined compound at controlled pressure to a pumping zone including a set of spaced parallel fine gear pumps arranged to pump fine streams of filter media strands surrounded by spaced insulating material through a porous electrically insulated zone having polytetrafluroethylene into a high voltage capillary feeding zone having spaced metal capillary tubes, wherein each of said metal capillary tubes has at least two sharp tapered tips ~~such as copper~~ and is charged by high voltage generation in the voltage range of 3kV to 100kV so as to emit nanofiber filter strands from ~~a source~~ each of said at least one capillary tubes in the approximate range of 0.1mm to 3mm and at a volume in the range of 0.008 to 20 cubic centimeters per minute; and,

passing said nanofiber filter strands from said source to a porous filter media substrate such as a selected porous paper sheet moveable, mounted on a grounded rotatable drum in a collector zone.

23 – 47. (Canceled)

48. (Currently Amended) A method of forming media strands comprising:

compounding a greater portion by weight of a water-soluble polymer with a lesser portion by weight of a selected cross-linking chemical agent with the remainder by weight being water to form a combined compound capable of preventing the water-soluble polymer from dissolving in water including an ambient humid environment;

elecrtospinning said compound through at least one capillary tube wherein each of said at least one capillary tube has at least two sharp tapered tips, said compound maintained at selected high voltage to emit nanofibers of sufficient strength and flexibility to permit media shaping; and,

collecting said nonofibers on a selected substrate, wherein the voltage is in the approximate range of 3 to 100 kV, wherein said combined compound comprises approximately 3% to 50% by weight of the water soluble polymer and said cross-linking chemical agent comprises approximately 0.1% to 20% of the compound by weight and said cross-linking chemical agent has a chemical agent selected from the group consisting of an acid, a dialdehyde, and combinations thereof, with the balance by weight of said compound being water.

49. (Currently Amended) A method of making media strands comprising:

compounding a water soluble polymer with a lesser portion of a cross-linking chemical agent in a water containing solution forming a compound; and

electrospinning said compound through at least one capillary tube, each of said at least one capillary tube has at least two sharp tapered tips, said compound forming said media strands

is electrospun through each of said at least one capillary tube ~~in~~ at a rate in the range of approximately 0.008 to 20 cubic centimeters per minute.

50. (Currently Amended) A method of making media strands comprising:

compounding a water soluble polymer with a lesser portion of a cross-linking chemical agent in a water containing solution forming a compound; and

electrospinning said compound from at least one capillary tube wherein each of said at least one capillary tube has at least two sharp tapered ~~tip~~ tips, ~~source~~ said at least one capillary tube having a diameter in the approximate range of 0.1mm to 3mm forming said media strands.